SECTION 15300

FIRE PROTECTION

PART 1 - GENERAL

2.1 Related Documents

A. All sections of Division 1.

B. Examine all drawings and all other Sections of the Specifications for requirements therein affecting the work of this Section. Work shall be coordinated with other trades prior to installation to prevent interference and relocations.

2.2 Summary

A. Sprinkler system.

2.3 System Description

A. Sprinkler System: Conform to the following criteria:
1. Limited area sprinkler system covering the areas shown on drawings.
2. Design to NFPA 13.
3. System performance to achieve ordinary hazard, Group 1.

2.4 Submittals

A. Product Data: For review provide data for sprinkler heads.

2.5 Quality Assurance

A. Perform Work in accordance with NFPA 13.

B. Equipment and Components: Bear UL, or FM label or marking.

C. Specialist Firm: Company specializing in sprinkler systems with three years experience.

PART 2 - PRODUCTS

2.6 Pipe and Tube

A. Steel Pipe: ASTM A53, ASTM A135, or ASME B36.10, Schedule 10 or 40 black.
1. Steel Fittings: ASME B16.9, wrought steel, butt welded; ASME B16.25, butt weld ends; ASTM A234, wrought carbon steel and alloy steel; ASME B16.5, steel flanges and fittings; ASME B16.11, forged steel socket welded and threaded.
2. Cast Iron Fittings: ASME B16.1, flanges and fittings; ASME B16.4, threaded fittings.
3. Malleable Iron Fittings: ASME B16.3, threaded type; ASTM A47.
4. Mechanical Grooved Couplings: Malleable iron housing, "C" shaped elastomeric sealing

gasket, steel bolts, nuts, and washers; galvanized for galvanized pipe.

B. Steel Pipe: ASTM A53, ASTM A135, or ASTM A795, Schedule 5 black.
1. Steel Fittings: Cold drawn steel, mechanically attached, with butylene or EPDM O-ring.

C. Copper Tubing: ASTM B75, ASTM B88, or ASTM B251; Type M or L hard drawn.
1. Fittings: ASME B16.18, cast bronze, or ASME B16.22, wrought copper and bronze, solder joint, pressure type.
2. Joints: ASTM B32, solder, Grade 95TA.
3. Mechanical Grooved Couplings: Ductile iron housing with alkyd enamel paint coating clamps to engage and lock, "C" shaped elastomeric sealing gasket, steel bolts, nuts, and washers.

2.7 Check Valves

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Refer to CSI SPEC-DATA II Building Products Directory for assistance in selecting manufacturers.
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A. Manufacturers:
1. [_____].
2. [_____].
3. [_____].

B. Up to and Including 2 inches (50 mm): Bronze body and swing disc, rubber seat, threaded ends.

C. Over 2 inches (50 mm): Iron body, bronze trim, swing check with rubber disc, renewable disc and seat, flanged ends [with automatic ball check].

D. 4 inches (100 mm) and Over: Iron body, bronze disc, stainless steel spring, resilient seal, threaded, wafer, or flanged ends.

2.8 DRAIN VALVES

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Refer to CSI SPEC-DATA II Building Products Directory for assistance in selecting manufacturers.
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A. Manufacturers:
1. [_____].
2. [_____].
3. [_____].

B. Bronze compression stop with hose thread nipple and cap.

C. Brass ball valve with cap and chain, 3/4 inch (19 mm) hose thread.

2.9 SPRINKLERS

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Refer to CSI SPEC-DATA II Building Products Directory for assistance in selecting manufacturers.
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A. Manufacturers:
   1. [_____] Model [_____].
   2. [_____] Model [_____].
   3. [_____] Model [_____].

B. Suspended Ceiling Type: [Standard] [Semi-recessed] [Recessed] [Concealed] pendant type with [brass] [chrome plated] [enameled] finish, and matching escutcheon.

C. Exposed Area Type: Standard upright type with [brass] [chrome plated] finish.

D. Sidewall Type: [Standard] [Semi-recessed] [Recessed] horizontal sidewall type [brass] [chrome plated] [enameled] finish with matching escutcheon.

E. Guards: Finish to match sprinkler head.

2.10 FIRE SPECIALTIES

A. Water Motor Alarm:
   1. Manufacturer: [_____] Model [_____].
   2. Hydraulically operated impeller type alarm gong, [chrome plated] [red enameled].

B. Electric Alarm:
   1. Manufacturer: [_____] Model [_____].
   2. Electrically operated [chrome plated] [red enameled] gong with pressure alarm switch.

C. Water Flow Switch: Vane type switch with two contacts.

2.11 FIRE DEPARTMENT CONNECTION

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Refer to CSI SPEC-DATA II Building Products Directory for assistance in selecting manufacturers.
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A. Manufacturers:
   1. [_____] Model [_____].
   2. [_____] Model [_____].
   3. [_____] Model [_____].

B. Type: [Flush mounted wall type with [brass] [chrome plated] finish.] [Free standing type with ductile iron pedestal [brass] [chrome plated] [red enamel] finish.]

C. Outlets: [Two] [_____] way with thread size to suit fire department hardware; threaded dust cap and chain of matching material and finish.

D. Drain: 3/4 inch (19 mm) automatic drip, to outside.

E. Label: ["Standpipe - Fire Department Connection".] ["Sprinkler - Fire Department Connection".]

PART 3 - EXECUTION

3.1 Installation

A. Install Work [in accordance with manufacturer's instructions.] [to NFPA 13.] [NFPA 13R.] [to NFPA 14.] [to NFPA 20.]

B. Ream pipe and tube ends to full inside diameter. Remove burrs and bevel plain end ferrous pipe.

C. Remove scale and foreign material, inside and outside, before assembly.

D. Provide sleeves when penetrating footings, floors, or walls. Seal pipe and sleeve penetration to maintain fire resistance equivalent to fire separation required.

E. Place pipe runs to minimize obstruction to other work. Offset around ductwork. Place piping in concealed spaces above finished ceilings.

F. Provide gate valves for shut-off or isolating service. Where approved, use butterfly valves instead of gate valves.

G. Provide drain valves at main shut-off valves, low points of piping and apparatus.

H. Connect system to water source ahead of domestic water connection with [double check valve] [reduced pressure back flow preventer] assembly.

I. Protection:
1. Apply temporary tape or paper cover to ensure sprinkler heads do not receive paint finish.
2. Ensure concealed sprinkler head cover plates do not receive field paint finish.

J. Interface sprinkler system with [building control system] [building fire and smoke alarm system.] [_____.]

K. Locate fire department connection with sufficient clearance from walls, obstructions, or adjacent siamese connectors to allow full swing of fire department wrench handle.

L. Flush entire piping system of foreign matter.

M. Hydrostatically test entire system. Test shall be witnessed by [Fire Marshall,] [authority having jurisdiction,] [Owner's insurance underwriter,] [Architect/Engineer,] [and] [_____].

END OF SECTION 15300